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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NITZAN PELEG, EDWARD BORTNIKOV and DROR ZERNIK

Appeal 2009-014570
Application 10/691,175
Technology Center 2100

Before JAY P. LUCAS, JAMES R. HUGHES, and
ANDREW J. DILLON, *Administrative Patent Judges*.

DILLON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

Appellants' invention is a system and method for performing conflict resolution when refreshing a materialized view. A logging mechanism includes a refresh log having multiple ranges, wherein each range has a timestamp associated therewith. Conflicts are resolved by selecting portions of the ranges with the most recent timestamps. *See Abstract.*

Claim 1 is illustrative with key disputed limitations emphasized:

1. A system, comprising:

a processor;

a memory;

a materialized view stored on the memory, the materialized view being derived at least in part from a table;

a logging mechanism stored on the memory, the logging mechanism configured to maintain a refresh log, the refresh log containing a first range and a second range that at least partially overlap, the first range and the second range each having a timestamp associated therewith; wherein the time stamp associated with each of the first range and second range respectively indicates when an operation corresponding to the first range and the second range occurred to the table; and

a refresh manager stored on the memory, the refresh manager configured to resolve conflicts between the first range and the second range that at least partially overlap by selecting portions of

the first range and the second range that have the more recent timestamp and applying the selected portions of the first range and the second range to the materialized view.

The Examiner relies on the following as evidence of unpatentability:

Downing US 6,289,335 B1 Sept. 11, 2001

THE REJECTION

The Examiner rejected claims 1-16 and claims 18-21 under 35 U.S.C. § 102(b) as unpatentable over Downing. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all the limitations of the base claim and any intervening claims. Ans. 3-7.¹

CONTENTIONS

Regarding representative claim 1, the Examiner finds that Appellants have disclosed, in paragraph 47 of the specification that “one range is contained entirely within another range” and notes that no limitation within the claims discloses that the “first range” is different from the “second range.” Consequently the Examiner contends that a single range with a modified row meets Appellants’ recitation within the claims. The Examiner also finds that Downing discloses a logging mechanism which maintains a refresh log having a first range having a timestamp associated therewith wherein upon the initiation of a refresh operation differences between the snapshot and the master tables are reconciled based upon the master log. The Examiner also notes that Downing discloses a refresh timestamp is maintained for each snapshot and for each entry in the master log.

¹ Throughout this opinion, we refer to the Appeal Brief filed January 19, 2009 and the Examiner’s Answer mailed May 12, 2009.

The Examiner finds that the refresh log comprises a plurality of entries, each entry comprising an epoch identifier. Ans. 3-7.

Appellants argue with regard to representative claim 1, as well as claims 10 and 19, that Downing does not disclose a logging mechanism configured to maintain a refresh log...containing a first range and a second range that at least partially overlap; or wherein each range includes a timestamp indicating when an operation corresponding to the first range and the second range occurred to the table. Br. 6-8. With regard to claims 5 and 14, Appellants argue that Downing fails to disclose a refresh log containing a range and a single-row entry, each having a timestamp associated therewith. Regarding claims 2-3, 6-8, 11-12, 15-17, and 20-21, the Appellants argue that Downing fails to disclose “epoch identifiers.”

The issue before us, then, is as follows:

ISSUE

Under § 102, has the Examiner erred in rejecting claims 1-16 and 17-21 by finding that Downing anticipates a system for performing conflict resolution when refreshing a materialized view, wherein the system includes a logging mechanism configured to maintain a refresh log containing a first range and a second range that at least partially overlap, each range having a timestamp associated therewith, wherein the timestamps are utilized to resolve conflicts during a refresh?

FINDINGS OF FACT

We find that the following enumerated findings of fact (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v.*

Quigg, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Appellants' specification discloses that one range within the refresh log may be contained entirely within another range. Specification, ¶[0047]
2. Downing discloses that a refresh timestamp is maintained for each entry in the master log and the refresh log. Downing, col. 8, ll. 51-56.
3. Downing discloses that in response to a refresh operation a snapshot is refreshed by reconciling differences between the snapshot, the first table and the second table, according to the snapshot definition query, the first log, the second log, the first table and the second table on a row by row basis. Downing, col. 3, ll. 61-67; col. 4, ll. 1-9.
4. Appellants' specification teaches that an "epoch number" identifies "a group of rows or records that have been added to the IUD log 100 since a previous refresh operation was performed." Specification, ¶ [0032] Appellants' specification further recites that an "epoch number" may be "the timestamp taken during the table lock period in the beginning of the refresh." Specification, ¶[0042]
5. Downing discloses a materialized view derived in part from a table, noting: "In order to support subquery snapshots, master logs record the primary key values, the filter values, and information about the modification for each row that is inserted, deleted or

modified in a corresponding master table.” Downing, col. 6, ll. 55-59.

ANALYSIS

Appellants argue that Downing fails to disclose a logging mechanism configured to maintain a refresh log “containing a first range and a second range that at least partially overlap.” Br. 6. In response the Examiner notes that Appellants’ specification recites that one range may be contained entirely within another range. (FF1)

We concur with the Examiner’s analysis and note that no limitation within Appellants’ claims or specification prohibits such interpretation.

Further we note nothing within Appellants’ claims or specification prohibits an interpretation of “range” as comprising two adjacent entries.

Appellants also argue that Downing fails to teach a timestamp associated with each “range” which indicates when an operation corresponding to each range occurred. Br. 7.

We find that a refresh timestamp is maintained by Downing for each entry in the master log and the refresh log. (FF2).

We are therefore not persuaded that the Examiner erred in rejecting representative claim 1.

Appellants argue, with regard to claim 5, that Downing fails to show a “logging mechanism configured to maintain a refresh log, the refresh log containing a range and a single-row entry, the range and single row entry each having a timestamp associated therewith.” Br. 9.

The Examiner finds that Downing utilizes a master log file to track and record rows that have been updated in the master table. Ans. 13.

We find that Downing teaches the refreshing of a log on a row by row basis (FF3) and consequently we agree with the Examiner's position set forth above and find that the Examiner did not err in rejecting claim 5.

Appellants argue that Downing fails to anticipate claim 10 for the reasons set forth above with regard to claim 1, *i.e.* a failure to disclose a timestamp associated with each range indicating when an operation in each range occurred. Br. 11.

Once again we concur with the Examiner and note that Downing discloses a refresh timestamp associated with each "range" which indicates when an operation corresponding to each range occurred. (FF2).

We therefore are not persuaded that the Examiner erred in rejecting claim 10.

Appellants argue, with regard to claim 14, that Downing fails to disclose "storing a range and a single-row entry in a refresh log, the range and the single-row entry each having a timestamp associated therewith, wherein the time stamp associated with the range indicates when an operation corresponding to the range occurred to the table and the time stamp associated with the single-row entry indicates when an operation corresponding to the single-row entry occurred to the table []". Br. 13.

As we note above, we find that Downing indeed discloses a refresh timestamp is maintained for each entry in the master log and the refresh log. (FF2) Further we find that Downing teaches the refreshing of a log on a row by row basis (FF3) and consequently we agree with the Examiner's position set forth above and find that the Examiner did not err in rejecting claim 14.

Appellants argue that claim 19 is patentable over the Downing reference in view of the failure of Downing to disclose a system in which

"the first range and the second range each having a timestamp associated therewith; wherein the time stamp associated with each of the first range and second range respectively indicates when an operation corresponding to the first range and the second range occurred to the table", as argued above with regard to claim 10. Br. 14-15.

We find the Examiner's position persuasive and note that Downing discloses a refresh timestamp associated with each "range" which indicates when an operation corresponding to each range occurred. (FF2).

Regarding claims 2-4, 6-9, 11-13, 15-18, and 20-21, Appellants argue that Downing fails to disclose an entry in the refresh log comprising an "epoch identifier." Br. 15.

The Examiner notes that Appellants' specification defines one example of the "epoch number" as a timestamp (FF4) and finds that Downing discloses a timestamp associated with each entry in the master log and the refresh log. (FF2).

We find that the timestamps within Downing anticipate the "epoch number" of Appellants' claims and consequently we are not persuaded that the Examiner erred in rejecting claims 2-4, 6-9, 11-13, 15-18, and 20-21.

CONCLUSION

The Examiner did not err in rejecting claims 1-21 under § 102.

ORDER

The Examiner's decision rejecting claims 1-21 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

Vsh